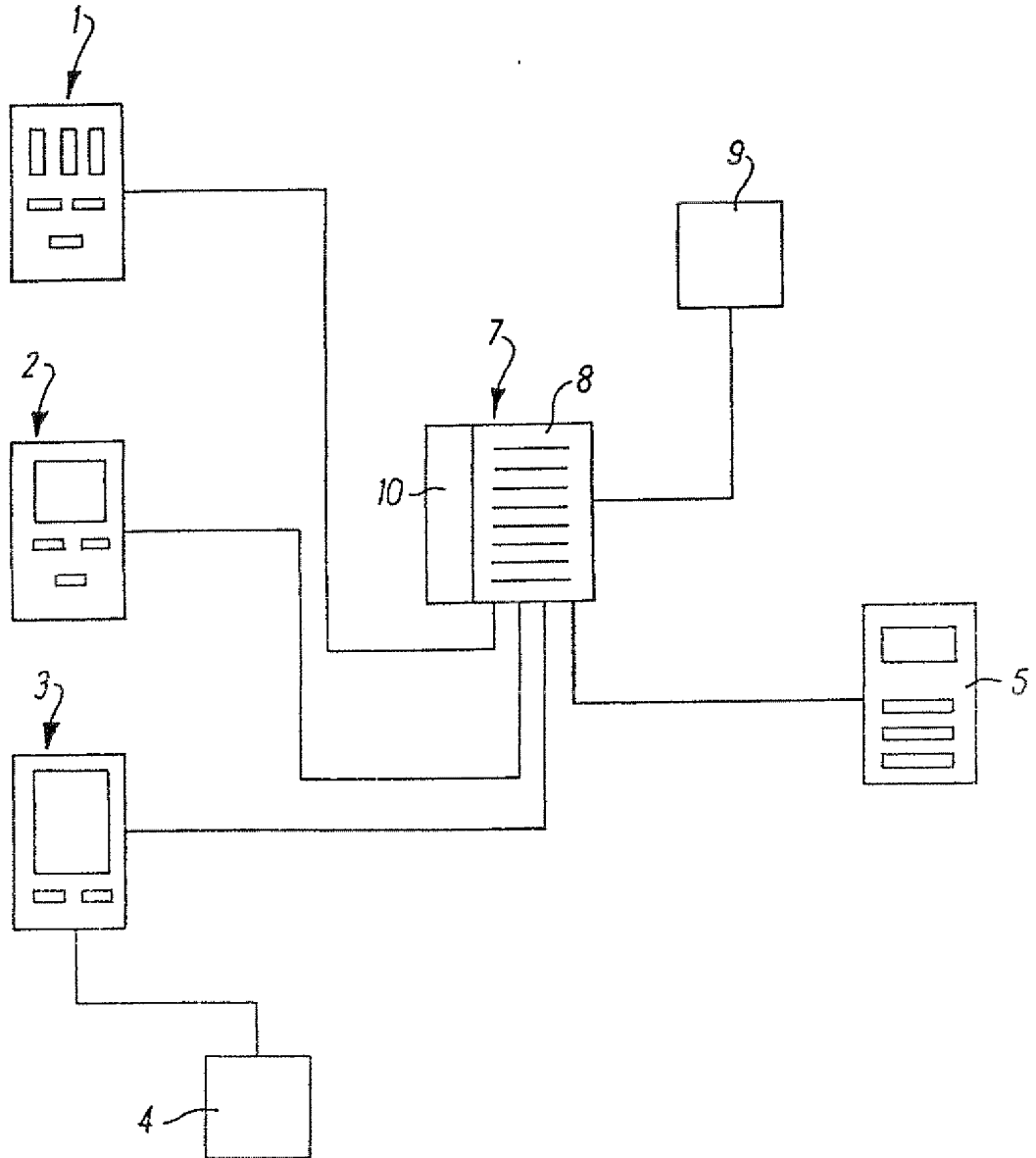


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DATA STORAGE

This invention relates to a data storage system for use with user-operable machines.

In the context of a site having a plurality of user-operable data-controlled machines, for example entertainment machines, such as fruit machines, juke boxes etc., each machine may contain data, such as control data for interpretation by a microprocessor-based machine control system, digital music data etc. This data is normally accommodated within the individual machine whereby it is necessary to provide adequate data handling facilities in the machine for all the data contemplated, and, in the event that it is desired to change or supplement the data of a particular machine, it may be necessary to modify or replace that machine or at least its data facilities.

An object of the present invention is to provide an improved system whereby it is possible to accommodate and allow for variation in machine control data in a particularly simple and convenient manner.

According to the invention therefore there is provided a machine system comprising a plurality of user-operable data-controlled machines characterised in that the machines are adapted to be connected to a common remote interactive data store whereby data for operational use by an individual machine is retrieved from the store on demand by selection from a range of data in the store.

With this arrangement, it is possible to make available a large amount of data for operational use by a machine without requiring extensive data handling facilities within the machine. Moreover, it is possible to provide for such data to be readily supplemented or changed without requiring personal attendance on

each machine for the purpose of modifying the data handling facilities thereof.

Most preferably, the data store is an interactive compact disc or CD-ROM store. There may be multiple discs, and a mechanical disc changer may be provided for automatic disc selection.

Preferably also, the arrangement is such that selected data is downloaded to the respective machine and is stored within the machine ready for use. Alternatively the data may be selected in real time i.e. it may be downloaded as it is used.

With regard to the machines these may be all of the same kind or they may be of different kinds. One or more machines may be of the amusement kind (AWP) or of the skill kind (SWP) or of the juke box kind or an EPOS machine (such as a till) or the like.

Transfer of data to a machine on demand may be achieved through the use of user controls (such as press-buttons or a touch screen or the like) and/or it may be effected automatically.

The connections between the machines and the data store may be of any suitable kind e.g. cable links or radiation links or optical links.

The invention will now be described further by way of example only and with reference to the accompanying drawing which is a schematic representation of one form of a machine system according to the invention.

The system is utilised in premises, such as a club or licensed premises or the like, where there are multiple user-operable data-controlled machines, in this case an amusement machine 1 of the random selection type (such as a rotating reel fruit machine), a skill machine 2 (such as a question and answer video game machine), a juke box of the kind having at least one wall box 3 which is used to select music to be played through an amplification system 4,

and an EPOS till 5. These machines are all connected by data links 6 of any suitable kind to a central interactive data store 7.

The data store 7 contains one of more stacks of digital storage devices 8 of the WORM compact disc type. The store is controlled by a microprocessor-based control system 9 and a disc changer mechanism 10 is provided for selection of individual discs. The control system 9 is operable interactively to search for and retrieve specified data by responding to input demand signals received from one of the machines 1-5 via the respective link 6. The control system seeks the appropriate disc (which is selected with the disc changer 10) and seeks the appropriate portion of the disc containing the data. The data is then retrieved and transmitted along the link 6 to the appropriate machine. For fast access and convenient storage purposes, the data may be stored compressed whereby the control system automatically decompresses the data as it is retrieved and relayed to the machine.

Each machine 1-5 has a microprocessor-based control system with temporary data storage (RAM). Each machine also has user-operable controls. On an automatic, or user-initiated basis, data is selected from the data store and transferred to each machine.

In the case of the AWP/SWP machines 1, 2, a number of different games may be made available on each machine. At the start of a playing sequence initiated by a player inserting coins or tokens to a requisite value into a coin mechanism of the machine, the player is required to select one game from a range of games. The player makes the selection (e.g. by pressing a button or operating a touch screen, or the like). Signals are transmitted from the machine 1, 2 to the data store 7. This causes the data store to identify the location of stored data corresponding to the selected game. This data is then

transmitted to the machine 1, 2 where it is stored in RAM and used to control the game. If a different game is selected subsequently, this stored data is overwritten with new data from the data store pertaining to the new game.

In the case of the juke box, the wall box 3 contains stored in RAM basic data relating to music albums available for selection. This data may be obtained from the data store 7 initially on power-up of the juke box. When a user operates controls (e.g. a touch screen) to select an album, detailed data relating e.g. to the appearance of the front cover of the album and to details of the individual tracks on the album, is retrieved from the data store, temporarily stored in RAM in the wall box 3, and used to produce an appropriate graphics/text display on a vdu screen of the wall box 3. When the user selects one of the tracks to be played (using the operator controls), data constituting digital music data is retrieved from the data store 7 and is used by the juke box (i.e. the wall box 3 and/or the remote amplification apparatus 4 connected thereto) to play back the music.

In the case of the EPOS till 5, data for operation of the till is retrieved from the data store 7 at the start of a period of use (e.g. at the start of a trading day), such data relating to the operational parameters of the till for controlling the manner in which sales are recorded, processed and used to control other operations such as stock control. The data may be retrieved automatically e.g. on power-up, or it may be initiated by user controls, such as a key switch or the like, on the till.

With the arrangement described above, a large amount of data can be made available from the central data store 7. This data can be easily modified, up-dated and supplemented by substituting or adding discs as required.

It is of course to be understood that the invention is not intended to be

restricted to the details of the above embodiment which are described by way of example only.

Thus for example data in the data store can be modified, updated and supplemented by transmission from a remote data source via a suitable radiation, cable, optical or other link, in the case where discs are used to which data can be written. By way of example, data may be transmitted from a satellite link or via a telephone cable.

CLAIMS

1. A machine system comprising a plurality of user-operable data-controlled machines characterised in that the machines are adapted to be connected to a common remote interactive data store whereby data for operational use by an
5 individual machine is retrieved from the store on demand by selection from a range of data in the store.
2. A machine system according to claim 1 wherein the data store is an interactive compact disc (CD-ROM) store.
3. A machine system according to claim 1 or 2 wherein the arrangement is
10 such that the selected data is downloaded to the respective machine and is stored within the machine ready for use.
4. A machine system according to claim 1 or 2 wherein the arrangement is such that the data is selected in real time so that it is downloaded as it is used.
- 15 5. A machine system according to any one of claims 1 to 4 wherein transfer of data to a machine on demand is achieved through the use of user controls.
6. A machine system according to any one of claims 1 to 4 wherein transfer of data to a machine on demand is effected automatically.
7. A machine system according to any one of claims 1 to 6 wherein the
20 machines are selected from amusement machines of the random selection type, skill machines, juke boxes, EPOS machines.
8. A machine system according to claim 1 substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing.

Patents Act 1977
 Examiner's report to the Comptroller under
 Section 17 (The Search Report)

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Application number

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Relevant Technical fields

- (i) UK CI (Edition K) G4V (VAA,V127,V118,V119)
 G4T (TBA) G4A (FGL)
- (ii) Int CL (Edition 5) G07F 17/32 17/34 G07G 1/00

Search Examiner

G NICHOLLS

Databases (see over)

- (i) UK Patent Office
- (ii)

Date of Search

22 JUNE 1992

Documents considered relevant following a search in respect of claims

1-8

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2227585 A (HITACHI) See abstract	1,3,5
X	GB 2217067 A (FUGI XEROX) See abstract	1,4,5
X	GB 2092796 A (INTER PLAY ELECTRONICS) Whole document	1,3,7
X	GB 2042234 A (BARCREST) Whole document	1,3,7
X	GB 1552086 (MATRA) See abstract	1,3,5
X	US 4841442 (FUJITSU) Whole document	1,4,5,7
X	US 4562341 (OMRON TATEISI) Whole document	1,4,5,7

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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